

More About ADOT . . . | Air Aware | Yavapai County



#### Our Goal:

Who We Are

The healthy air in Central Yavapai County is a valuable natural resource that needs to be actively protected. "Air Aware" is a campaign to encourage voluntary efforts on the part of individuals, businesses, and local governments to keep our air clean, even if there is significant population growth in the region over the next twenty years.

Educational Resources
Newsletters and Fact Sheets
Your Local AQ Contact
More Air Quality Information
Cool Stuff

**Slide Presentation (.pdf)** 

Yavapai Area Governments
AIR AWARE

Return to ADOT Air Aware Home Page

#### **Last Updated 03/11/2002**

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For general information or questions: <u>info@dot.state.az.us</u>

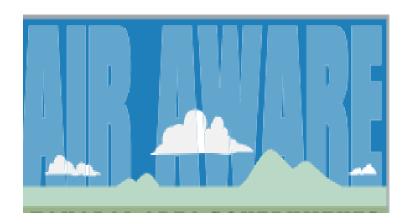
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#### Who we are

**OUR GOAL:** 

WHO WE ARE:

OUR AIR QUALITY MISSION STATEMENT:

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#### WHAT WILL WE DO? -OUR KEY EMPHASIS AREAS:

- Mass Mailings
- Curriculum Materials For Educators
- Public Service Announcements
- Field Manuals
- Speakers' Bureau
- Outreach Database
- Press Releases

#### WHAT HAVE WE DONE SO FAR: THE AIR QUALITY SUSTAINABILITY STUDY

In 1999, representatives of the Yavapai Area Governments and Prescott College participated in a pilot air quality sustainability study, sponsored by the Arizona Department of Transportation (ADOT), and identified an educational/ outreach program as an important strategy to sustain clean air in Central Yavapai County. AIR AWARE is the follow-up effort to develop and implement the educational/outreach program also funded by ADOT.

WHAT ELSE IS BEING DONE?

Jurisdictions represented by the Yavapai Area Governments may also consider adopting an ordinance that would ban wood-burning fireplaces (unless they are clean-burning by EPA standards) in new residential construction.

#### ADDITIONAL AIR AWARE SPONSORS

- Central Yavapai Transportation Planning Organization
- Prescott Chamber of Commerce
- Prescott Alternative Transportation.

How Can You Become A Sponsor? Obtain More Information?

Call the Air Aware Coordinator at (520) 999-9999 or send us an e-mail at: staff@YAGAIR.org



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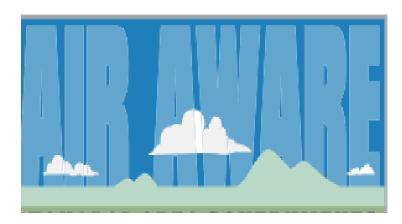
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#### **Educational Resources**



### American Lung Association of Gulfcoast Florida

AirWise Home Page: Internet site with interactive games and information.

AirWise Curriculum: Environmental education program for middle school students.



### **Educational Development Specialists**(EDS)

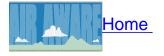
THINK EARTH: An environmental education program developed by EDS, a consulting firm that specializes in designing, developing, and distributing educational curricula, programs, and materials.











### Puget Sound Air Pollution Control Agency

Clean Air Express: An air quality resource manual for teachers.

#### **EPA's Internet site for Kids**

EPA's Internet site offers many fun and interesting educational activities for children ages 5-12 ranging from an environmental quiz to a comic book, andart projects.

#### **EPA's Education and Outreach group**

The group provides a wealth of resources for general, teacher/students, and technical audience in the form of Internet sites, tutorials, and a Air Pollution Distance Learning Network.

#### **TribalAir**

The TribalAIR web site is designed to strengthen EPA and Tribal air quality programs in Indian Country

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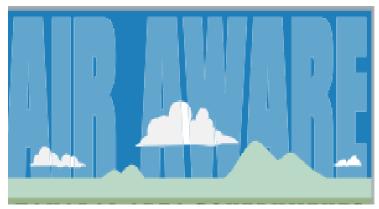
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Newsletters and Fact Sheets

#### **Newsletters**

#### **Fact Sheets**

- Sustaining Clean Air in Yavapai County
- Woodburning and Air Quality
- The AIR AWARE Program

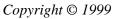


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## Sustaining Clean Air in Yavapai County

Central Yavapai County is one of the fastest growing areas in Arizona. Although our region does not currently violate the national standards for any air pollutants, the dramatic growth in population, jobs and vehicle travel expected during the next twenty years poses a potential threat to maintaining clear and healthy air.

In order to prevent the degradation of our air quality, elected officials, local government representatives and others with environmental interests in Central Yavapai County participated in an air quality visioning process sponsored by the Arizona Department of Transportation (ADOT) during the Fall of 1999. The purpose of the visioning process was to:

- 1. Provide information on the current status of air quality in the area;
- 2. Discuss potential problems, opportunities, costs and benefits of sustaining clean air over the next twenty years; and
- 3. Identify control strategies that might be feasible for implementation in the Central Yavapai County area.

The following vision statement was developed by participants:

The residents of Central Yavapai County will participate in a proactive effort to keep the air clean and preserve the high quality of life in the region. This regional effort will demonstrate national leadership, while avoiding the detrimental medical, environmental, lifestyle and economic impacts experienced in

regions with unhealthy air. Local governments will achieve this goal by taking continuing and cooperative actions to sustain clean air, even as the region grows substantially over the next twenty years.

#### AIR QUALITY SUSTAINABILITY STRATEGIES

Participants evaluated and screened 47 potential air quality sustainability strategies and selected 19 for further consideration in Central Yavapai County. The top five priority strategies were:

- Fugitive Dust Control Plans. Adopt an ordinance requiring construction and earth moving operators to develop dust control plans and apply control measures to minimize dust at the project site. The plan would have to be approved before a grading and drainage permit was issued.
- 2. Clean Burning Fireplaces in New Construction. Develop an ordinance that prohibits the installation or construction of fireplaces and wood stoves in new construction, unless the devices are "clean burning," as certified by the Environmental Protection Agency.
- 3. Educational and Outreach Campaign to Sustain Clean Air. Conduct a comprehensive multimedia campaign to promote voluntary strategies such as alternative transportation modes, compressed work schedules, telecommuting, alternative fuels for vehicles, alternatives to wood burning in the winter, and fueling vehicles after sunset in the summer.
- 4. Mitigation Bond Requirement. Require dust control plans (in #1 above) to be accompanied by a letter of credit or bond which guarantees that the dust will be controlled.
- 5. Stabilize Unpaved Roads and Alleys. Pave, gravel, or stabilize all unpaved roads and alleys carrying a significant volume of vehicle traffic.

#### **CLEAN AIR ACTION PLAN**

A final product of the visioning process was a Clean Air Action Plan, listing actions to be taken, responsibilities, and general time frames for implementing the actions. The goal of the Clean Air Action Plan is to sustain the current air quality in the region and avoid any possibility that the region would be classified as a nonattainment area in the future. The Plan identifies five tasks:

- 1. Set up an Air Quality Steering Committee
- 2. Scope and conduct a monitoring pilot study
- 3. Design and conduct an air quality outreach/education program
- 4. Identify voluntary measures, and
- 5. Develop ordinances.

#### EDUCATIONAL AND OUTREACH CAMPAIGN

In 2000 ADOT provided funding to initiate the third strategy, Educational and Outreach Campaign to Sustain Clean Air, now known as the Yavapai Area Governments' AIR AWARE Program. The second strategy, requiring clean burning fireplaces in new construction, is also being considered for implementation by local governments in Central Yavapai County.

Our ongoing efforts to sustain clean air in Central Yavapai County are pioneering. Ours is one of the first attempts in the nation to proactively protect air quality in an area that is well within the national

standards. Implementing the Clean Air Action Plan will ensure that air quality in the area is not degraded, despite dramatic increases in population growth over the next twenty years. Air quality and the overall quality of life in the region can be sustained through a coordinated regional partnership with a clear vision and direction.

#### FOR MORE INFORMATION:

Call the Air Aware Coordinator at (602) 712-4387.



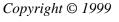
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## Woodburning and Air Quality

Wood burning contributes to carbon monoxide and fine particulate matter (PM) air pollution. Carbon monoxide and PM are unhealthy to breathe at high concentrations, especially for the young, the elderly and those with lung or cardiovascular disease. Although the Central Yavapai County area does not currently violate the national air quality standards for these pollutants, significant increases in people, jobs, and vehicle travel over the next twenty years could degrade our clean air. Reducing wood burning is one way to offset the negative effects of growth on our air quality.

The incomplete burning of wood causes tiny particles and gases, including carbon monoxide, to be released into the air. Because wood burning typically occurs in the winter, higher amounts of carbon monoxide and PM pollution can also occur then. To make matters worse, temperature inversions often take place on winter evenings, sandwiching a layer of warmer polluted air between a cooler upper air mass and the ground. This "traps" air pollution until the next morning, when traffic and wood burning add more emissions, resulting in even higher concentrations. The Arizona Department of Environmental Quality has estimated that wood burning may cause as much as 40 percent of the pollution in neighborhoods during temperature inversions. So it is especially important to limit wood burning activities during winter inversion conditions.

#### WHAT OTHER AREAS ARE DOING:

Many areas have implemented wood burning restrictions in order to reduce wintertime air pollution. Some examples are:

 Albuquerque issues no-burn advisories on high pollution days between October 1 and February 28.

- Denver prohibits most wood burning activity on "high pollution days" between November 1 and March 31.
- Flagstaff prohibits the installation or sale of wood heaters or fireplace inserts that fail to meet Environmental Protection Agency certification standards. Also prohibits coal burning.
- Maricopa County issues "air quality alerts" when when carbon monoxide and particulate concentrations are high and weather conditions dictate between October 1 and February 29.
   During such alerts, all non EPA-certified wood burning devices must be shut down within three hours.

Most jurisdictions exempt wood burning devices that are a home's sole source of heat.

Arizona taxpayers can deduct up to \$500 from Arizona gross income for the cost of purchasing and installing an approved wood stove or wood/gas fireplace equipment. Up to \$500 of the cost of converting an existing wood fireplace to an approved wood stove or wood/gas fireplace may also be deducted. Contact the Arizona Department of Revenue (800-352-4090) for more information.

#### WHAT YOU CAN DO:

- 1. Take advantage of the Arizona tax deduction and convert your wood burning fireplace to natural gas or electric logs or an EPA-certified low-emission device.
- 2. Use seasoned (dried at least 6-8 months) firewood to provide the cleanest, cheapest and safest fire.
- 3. Don't use anything (i.e. organic material, rubbish, or chemically treated wood) but paper to start the fire and use properly seasoned firewood.
- 4. Avoid recreational use of wood burning fireplaces on winter evenings and mornings when winds are light and the temperature is less than 40 degrees.
- 5. If smoke is visible from your chimney, open the damper to provide more air.
- 6. Allowing a wood fire to smolder produces the most pollution and greatly increases creosote buildup in the chimney.
- 7. Support the development of local ordinances requiring clean burning fireplaces and wood stoves in new construction.

#### FOR MORE INFORMATION:

Call the Air Aware Coordinator at (520) 999-9999.

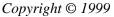


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# The AIR AWARE Program

#### **OUR GOAL:**

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#### WHAT WILL WE DO? -OUR KEY EMPHASIS AREAS:

AIR AWARE Website

- Mass Mailings
- Curriculum Materials for Educators
- Public Service Announcements for Newspapers, Radio, and TV
- Field Manuals for Construction Practices? Speakers' Bureau
- Outreach Database
- Press Releases

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#### AIR AWARE SPONSORS

Other Sponsors – Central Yavapai Transportation Planning Organization, Prescott Chamber of Commerce, and Prescott Alternative Transportation

#### **BECOME A SPONSOR:**

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#### FOR MORE INFORMATION:

Visit the AIR AWARE Web site at www.dot.state.az.us/about/air/index.htm



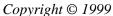
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#### Cool Stuff

Source:

**American Lung Association of Gulfcoast Florida** 

Check out some of these great activities:

#### **Pop Quiz**

Matching exercise

The following are the symbols for the six major air pollutants.

Can you identify them by matching the items on the left to the items on the right?

 $\mathbf{CO}$ 

 $SO_2$ 

 $NO_2$ 

 $O_3$ 

PM

Your score is:

#### Air Pollution Baseball

This is a question and answer game with rules similar to baseball. Students are divided into two teams. The student "at bat" chooses the difficulty of the question to be answered: single is easiest, home run is most difficult. If the question is answered correctly, that student advances to the base of the chosen question. If the question is answered incorrectly, it is an out for that student's team. The team with the most runs wins.

#### **Air Pollution Shoot-Out**

Similar to the TV show, The Family Feud, this question and answer game requires two to four teams and a bell for each team. The teacher asks questions and the first team to ring a bell is given the opportunity to answer. For each correct answer, a point is rewarded. If answered incorrectly, another team is given the chance to answer. At the end of a pre-determined time, the team with the most points wins.

#### **Banner**



If you would like to create a button to link to this Web site, please place the following code where you want the button to appear:

<a href="www.dot.state.az.us/about/air/index.html" target="top"> <img src="www.dot.state.az.us/about/air/index.html/banner.gif" border="0" alt="Button"></a>



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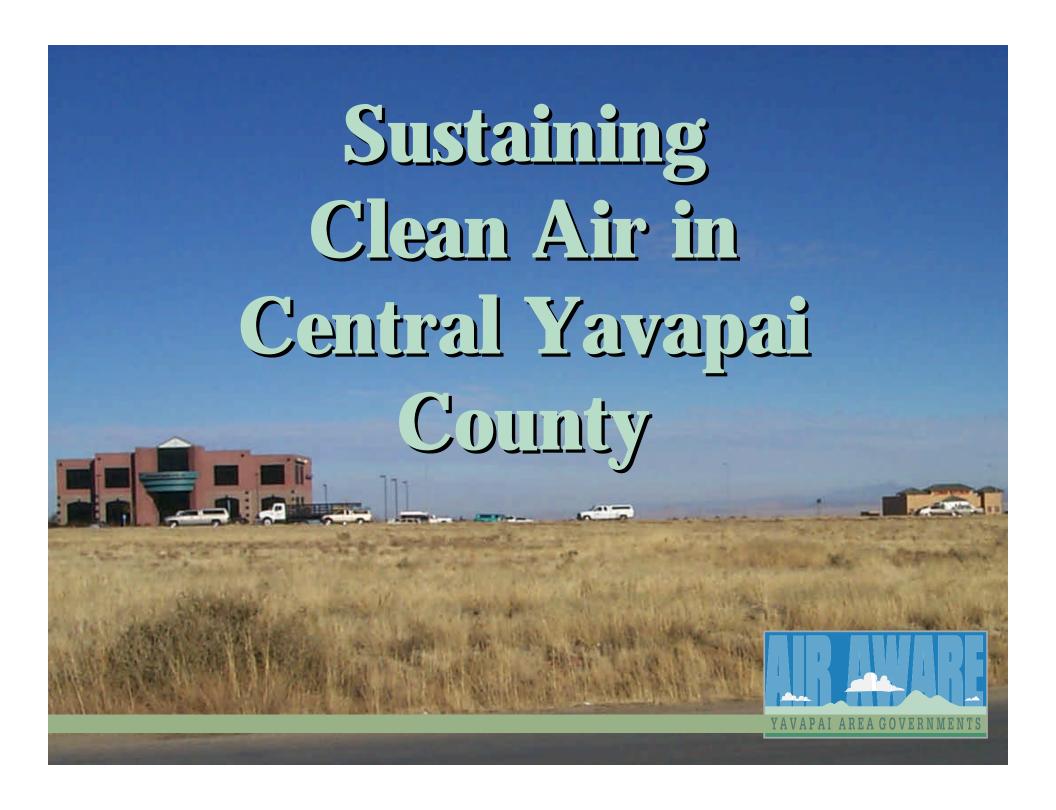
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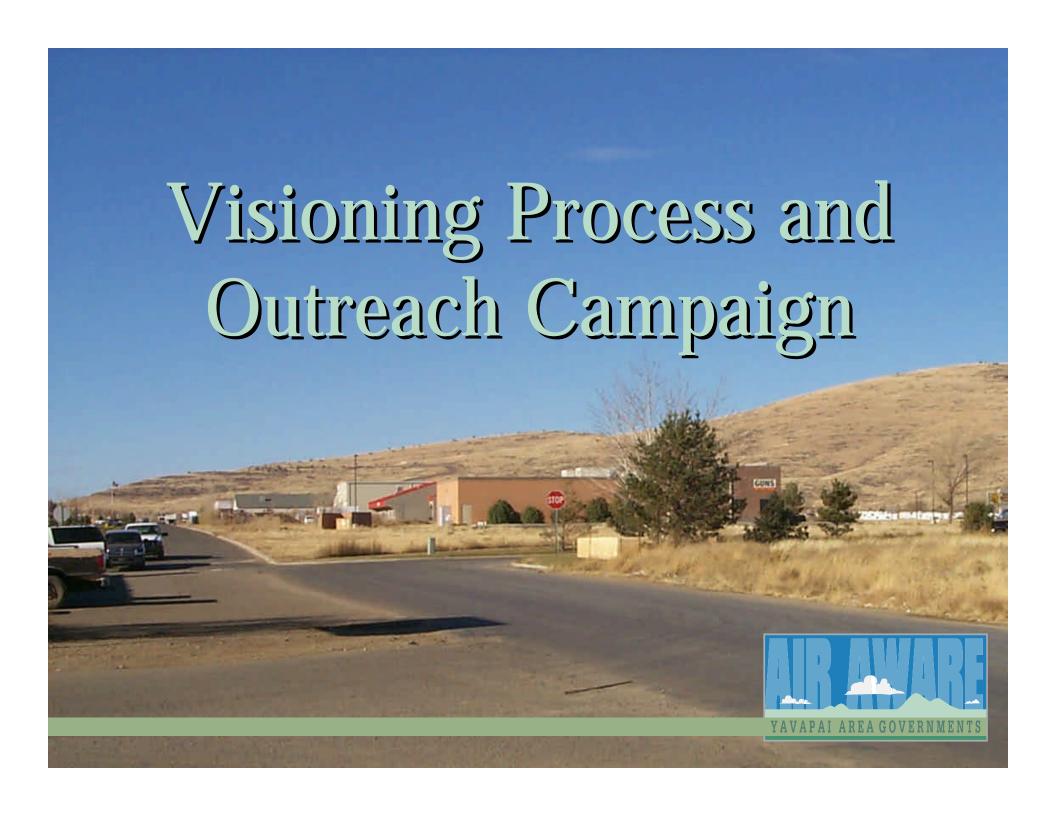
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# Sustaining Clean Air in Central Yavapai County

- Visioning Process and Outreach Campaign
- Background on Air Pollution
- Air Quality for Central Yavapai County
- Air Pollution Control Strategies
- What You Can Do





### Visioning Process

- Visioning Group
  - Elected officials
  - Local government representatives



- Others with environmental interests
- **■** Goals
  - —Keep air clean
  - Preserve high quality of life
  - Avoid impacts of unhealthy air



### Visioning Group

Developed Mission and Vision Statement

Identified preferred control strategies



Identified sources of air pollution

Developed Clean Air Action Plan



### Vision Statement

The residents of Central Yavapai County will participate in a proactive effort to keep the air clean and preserve the high quality of life in the region. This regional effort will demonstrate national leadership, while avoiding the detrimental medical, environmental, lifestyle and economic impacts experienced in regions with unhealthy air. Local governments will achieve this goal by taking continuing and cooperative actions to sustain clean air, even as the region grows substantially over the next twenty years.



# The "Air Aware" Campaign in Yavapai County

- Seek action from local governments to sustain clean air
- Inform public of issues
- Educate youth
- Involve business community
- Get feedback
- Develop regional program







- Carbon Monoxide
- → Nitrogen Dioxide
- Ozone
- Particulate Matter
- Sulfur Dioxide



### Dangers of Air Pollutants

- Threat to those with heart disease
- Cause anemia, brain damage, kidney disease dizziness, headaches, fatigue, visual impairment
- Damage respiratory system, lower body defenses
- Cause chest pain, nasal congestion, sore throat
- Contribute to premature mortality and morbidity
- Most dangerous to the elderly, young children, and persons with respiratory ailments.



### Control Strategies Effective Nationwide (1977 - 1996)

■ Lead down 97 percent

■ Carbon Monoxide down 61 percent

■ Ozone down 30 percent

■ Particulates down 12 percent



### Particulate Problems Remain





### Air Quality for Central Yayapai County

- No violations of the National Ambient Air **Quality Standards**
- Cause for concern high growth rates over the next 20 years:

- Population

+ 5.1% per year

Employment

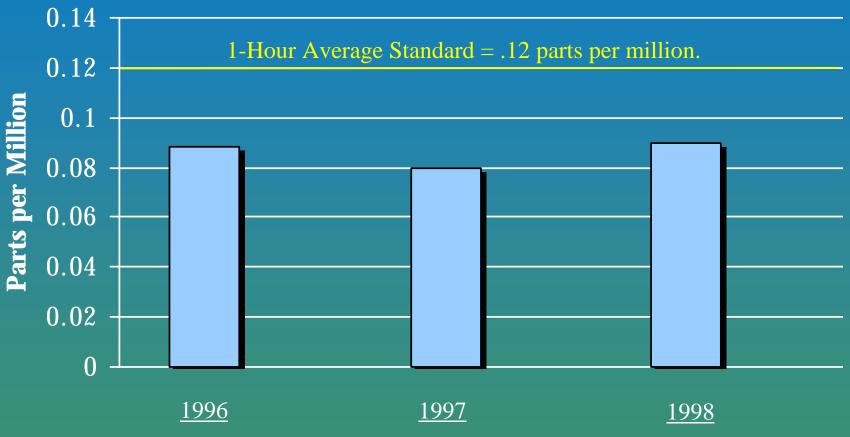
+ 4.7% per year

- Vehicle Miles of Travel + 5.4% per year



#### **Ozone Concentrations**

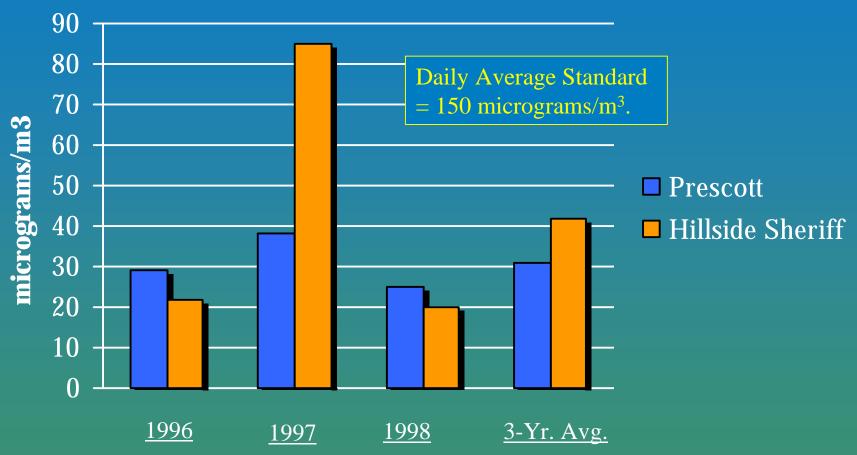
(1-Hour Average)



Measured at Hillside Sheriff Station



## Daily Particulate Concentrations





### **Key Sources of Air Pollutants**

Source Primary Pollutant

Fugitive Dust & Unpaved Roads Particulates

Wood-burning Fireplaces and Stoves Particulates,

Heavy Duty Vehicles and Equipment Particulates

Motor Vehicles Carbon Monoxide,

Volatile Organic Compounds,

Nitrogen Oxides

Carbon Monoxide

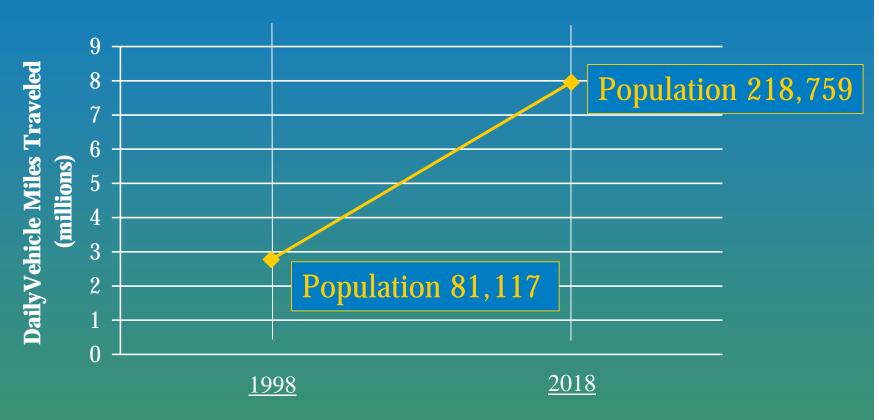
Urban Sprawl & "Dirty" Industries Carbon Monoxide,

Volatile Organic Compounds,

**Particulates** 



## Central Yavapai County Forecasts





## Causes for Concern



- Levels of air-borne pollutants increase with Vehicle Miles Traveled
- Wood-burning fireplaces, construction and use of unpaved roads increase particulates





## **Preferred Control Strategies**

Codu

Control dust during construction

Put clean-burning fireplaces

in new homes

Develop educational outreach program



Cleanup spills on paved roads quickly



Stabilize unpaved roads

Encourage clean industries

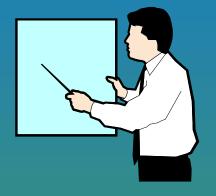


#### Clean Air Action Plan



Establish air quality steering committee

Implement educational outreach program



Conduct a monitoring pilot study

Identify voluntary measures and ordinances



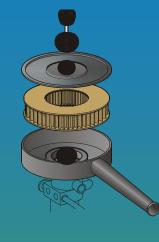
Estimate costs, and identify funding issues





## What You Can Do on the Road

Keep your vehicles well-tuned



Replace air filters regularly; keep tires inflated



Carpool, take the bus, ride a bike, walk to work or school



Avoid driving during peak traffic periods



### More Things You Can Do

Drive newer, low-emission vehicles



Drive slower on unpaved roads



Refuel vehicles after 5 p.m. and don't "top off" or spill fuel during refueling

Don't park on unpaved lots



**Telecommute** 

Limit use of off-road vehicles



#### What You Can Do at Home

Mow the lawn or use other gas-powered equipment after 5 p.m



Avoid using a leaf blower



Limit use of your wood-burning fireplace and use dry wood

Upgrade to a clean-burning stove or fireplace



Encourage your community to provide natural gas service for heating and cooking

Encourage "clean" industries



# Support the Air Aware Campaign!

- Share "What You Can Do" tips with others
- Support the Clean Air Action Plan
- Refer your questions/comments to the Air Aware Coordinator
- Take a breather and continue to enjoy the clean air in Central Yavapai County!



